



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **61124029 A**(43) Date of publication of application: **11.06.86**

(51) Int. Cl.

H01J 27/16(21) Application number: **59244810**(22) Date of filing: **21.11.84**(71) Applicant: **TOSHIBA CORP**(72) Inventor: **YOSHIDA HIDEKI
SUGAWARA TORU****(54) HIGH FREQUENCY ION SOURCE**

ion source.

(57) Abstract:

COPYRIGHT: (C)1986,JPO&Japio

PURPOSE: To obtain a high frequency ion source which can supply electron without being accompanied by a sudden rise of gas pressure by preparing a sub-discharge chamber with higher gas pressure, as well as a main-discharge chamber.

CONSTITUTION: In this high frequency ion source, Xe gas is introduced into a sub-discharge chamber 10 in which pressure is higher than in a main-discharge chamber 7, from gas introducing system 5. Setting up the pressure in the sub-discharge chamber 10 to such a degree that initial ionization plasma can be generated, enables naturally ionized electrons to be accelerated in the peripheral direction by high frequency electric field induced with an induction coil 6 and to collide with Xe gas to generate the ionization plasma. The ionization plasma generated in the sub-discharge chamber 10 flows into the main-discharge chamber 7. Electrons in the ionization plasma flowing into the main-discharge chamber 7 collide with Xe gas to generate ionization plasma. Thus Xe^+ ions are induced/accelerated out of ionization plasma by electrodes 2, 3, and 4, and then released outside from the high frequency

